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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,894	11/16/2001	Roy E. Scheuerlein	023-0013	3451
22120	7590	10/20/2003	EXAMINER	
ZAGORIN O'BRIEN & GRAHAM LLP			YOHA, CONNIE C	
401 W 15TH STREET			ART UNIT	
SUITE 870			PAPER NUMBER	
AUSTIN, TX 78701			2818	

DATE MAILED: 10/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/990,894	SCHEUERLEIN, ROY E.	
	Examiner	Art Unit	
	Connie C. Yoha	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Examiner took notice of the remarks and amendments made by applicant filed on 8/7/03.

Withdrawn of allowability

2. The indicated allowability of claim 7-12, 17-23, 35-39 and 43-44 is withdrawn in view of the newly discovered reference.
3. A second non-final rejection is applied to the pending claims using newly cited reference.

Response to Amendment

4. This office action is in response to Amendment filed on 8/7/03.
Claim 1 and 2 are amended.
5. Claims 1-68 are pending.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-6, 13-16, 24-34, 50 and 63 are rejected under 35 U.S.C. 102(b) as being anticipated by Krentz et al, Pat. No. 5371706.

With regard to claim 29, 50, and 63 Krentz discloses an integrated circuit having a fully-decoded array of memory cells, each memory cell coupled to one of a plurality of X-lines and one of a plurality of Y-lines, wherein each Y-line is associated with a plurality of X-lines by virtue of the memory cells respectively coupled there between (fig. 1); an X-line circuit (fig. 1, 16) for selecting, in a first mode of operation, an X-line associated with a first selected first Y-line to impress a read bias across a corresponding memory cell coupled between the selected X-line and the first selected Y-line (fig. 1, 21) (col. 5, line 38-55), and for selecting, in a second mode of operation, a first plurality of X-lines associated with the first selected Y-line to impress a read bias across each of a corresponding first plurality of selected memory cells respectively coupled between the first plurality of selected X-lines and the first selected Y-line (col. 7, line 5-26); a first read circuit (fig. 4, 25) for determining, in a least the second mode of operation, whether an aggregate read current of the first plurality of selected memory cells coupled to the first selected Y-line exceeds a second mode threshold level of current, and for generating a first read signal accordingly (col. 7, line 5-26).

With regard to claim 30, Krentz discloses wherein the first read circuit is configured for determining, in the first mode of operation, whether a read current of the selected memory cell coupled to the selected Y-line exceeds a first mode threshold level of current (col. 6, line 35-45).

With regard to claim 31, Krentz discloses wherein the threshold level of current for the first read circuit in the second mode of operation is different than for the first mode operation (col. 6, line 46-64) (also with regard to claim 32, 33).

With regard to claim 34, Krentz further discloses an output circuit (fig. 4, 26) responsive to at least the first read signal, for conveying an output signal derived at least from the first read signal.

Drafted as Method claim

As per claim 1-6, 13, 14-16, and 24-28 encompasses the same scope of invention as to that of claim 29, 30-34, 50 and 63 except they draft in method format instead of apparatus format. The claims are therefore rejected for the same reason as set forth above.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7-12, 17-23, 35-39, 51-60, 64-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krentz et al, Pat. No. 5371706 in view of Tanaka et al, Pat. No. 5909399.

With regard to claim 35, Krentz, as applied in prior rejection, disclosed all claimed subject matter except a second X-line circuit for selecting, in the second mode of operation, a second plurality of X-line associated with a second selected Y-line to impress a read bias across each of a corresponding second plurality of selected

memory cells respectively coupled between the second plurality of selected X-lines and the second selected Y-line; and a second read circuit for determining, in a least the second mode of operation, whether an aggregated read current of the second plurality of selected memory cells coupled to the second selected Y-line exceeds a second mode threshold level of current, and for generating a second read signal accordingly. However, although Krentz only discloses a first set of X-lines, selected plurality of X-line, X-line circuit, and Y-line, plurality sets of these features are also inherently incorporated within the device, since memory array can be divided into plurality of columns or subarray of which, during first and second mode, these columns or subarrays performed the tasks similarly to that of the first columns. Tanaka et al (fig. 6) discloses such repeated features of each column having column lines and row lines and read circuits, each of which have physical and operational characteristics exactly like one another. Therefore, it would have been obvious for one having an ordinary skills in the art at the time the invention was made to realized that Krentz's device would also have the second set X-lines, selected plurality of X-line, X-line circuit, and Y-line to operate similarly to the first set of X-lines, selected plurality of X-line, X-line circuit, and Y-line when the memory device is expanded to discloses the entire memory array device structure (also with regard to claim 36-39, 51-54, and 64-67).

Drafted as Method claim

As per claim 7-12, 17-23, 55-60 encompass the same scope of invention as to that of claim 35-39, 51-54, 64-67 except they draft in method format instead of apparatus format. The claims are therefore rejected for the same reason as set forth above.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 40-42, 61-62 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krentz et al, Pat. No. 5371706 in view of Jacobson, Pat. No. 6499124.

With regard to claim 40, Krentz discloses, as applied in prior rejection, all claimed subject matter including the X-line circuit comprises a first X-line circuit (fig. 1, 16); the first mode of operation comprises a read mode of operation (col. 5, line 38-55); the second mode of operation comprises a test mode of operation (col. 7, line 5-26); the first read circuit (fig. 4, 25) is for determining, in both the read and test modes of operation, whether an aggregate read current of the one or more selected memory cells coupled to the first selected Y-line exceeds a respective threshold level of current, and for generating the first read signal accordingly (col. 7, line 5-26) (also with regard to claim 42. Krentz does not disclose that each memory cell comprises a passive element memory cell including an anti-fuse. However, Jacobson discloses that the memory cell used in his device is comprised of any type of non-volatile memory cells of which include an anti-fuse type (col. 9, line 67-col. 10, line 5). Therefore, it would have been

obvious for one having an ordinary skill in the art at the time the invention was made to recognized that the nonvolatile memory transistor of Krentz can be replaced with such anti-fuse memory cell of Jacobson to use as a storage device to stored data (also with regard to claim 68).

With regard to claim 41, Krentz discloses wherein the threshold level of current for the test mode of operation is different than for the read mode operation (col. 6, line 46-64).

Drafted as Method claim

As per claim 61-62 encompasses the same scope of invention as to that of claim 40-42, and 68 except they draft in method format instead of apparatus format. The claims are therefore rejected for the same reason as set forth above.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 43-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krentz et al, Pat. No. 5371706 in view of Jacobson, Pat. No. 6499124, and further in view of Tanaka et al, Pat. No. 5909399.

With regard to claim 43, Krentz and Jacobson, as applied in prior rejection, disclosed all claimed subject matter except a second X-line circuit for selecting, in the second mode of operation, a second plurality of X-line associated with a second selected Y-line to impress a read bias across each of a corresponding second plurality of selected memory cells respectively coupled between the second plurality of selected X-lines and the second selected Y-line; and a second read circuit for determining, in at least the second mode of operation, whether an aggregated read current of the second plurality of selected memory cells coupled to the second selected Y-line exceeds a second mode threshold level of current, and for generating a second read signal accordingly. However, although Krentz only discloses a first set of X-lines, selected plurality of X-line, X-line circuit, and Y-line, plurality sets of these features are also inherently incorporated within the device, since memory array can be divided into plurality of columns or subarray of which, during first and second mode, these columns or subarrays performed the tasks similarly to that of the first columns. Tanaka et al (fig. 6) discloses such repeated features of each column having column lines and row lines and read circuits, each of which have physical and operational characteristics exactly like one another. Therefore, it would have been obvious for one having an ordinary skills in the art at the time the invention was made to realized that Krentz's device would also have the second set X-lines, selected plurality of X-line, X-line circuit, and Y-line to operate similarly to the first set of X-lines, selected plurality of X-line, X-line circuit, and Y-line when the memory device is expanded to discloses the entire memory array device structure (also with regard to claim 36-39, 51-54, and 64-67).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. Rouy (5351214) and Atsumi et al (5568419) disclose a memory device.

10. When responding to the office action, Applicants' are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

11. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see MPEP 710.02 (b)).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to whose telephone number is (703) 306-5731. The examiner can normally be reached on Mon. - Fri. from 8:00 A.M. to 5:30 PM. The examiner's supervisor, David Nelms, can be reached on (703) 308-4910. The fax phone number for this Group is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-0956.


C. Yoha

October 2003


Connie C. Yoha

Technology 2800